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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/786,685

02/25/2004

Sundar Mohan Rao

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05/09/2006

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EXAMINER

EINSMANN, MARGARET V

ART UNIT

PAPER NUMBER

1751

DATE MAILED: 05/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/786,685	RAO, SUNDAR MOHAN	
	<b>Examiner</b>	<b>Art Unit</b>	
	Margaret Einsmann	1751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 2/15/06
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3-10 <sup>12-14</sup> is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3-10 <sup>12-14</sup> is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-10, 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Locke et al., US 5,756,020 in view of Reinehr et al., US 4,087,494 and Hixon et al., US 5,445,653.

Locke et al. disclose a process of producing solution dyed extruded fibers wherein several colorants are mixed to form a large variety of colored polymer products. In the example in column 4, nylon 66 is colored "Weathered Tan" by mixing black, white, yellow and red pigments into the nylon 66 prior to spinning. These are the colors of the pigments added to the claimed process in applicant's claims. Regarding claim 7, Locke et al. discloses that copolymers of nylon containing 1-4% of the sodium salt of 5-sulfoisophthalic acid (cationically dyeable) nylon are particularly useful. Col 3 lines 15-17. Locke does not teach over dyeing, nor the particularly claimed amount of color pigment added or the particular pigments as claimed.

Reinehr et al. disclose a process of incorporating carbon black pigment into a polymer before spinning and extruding, and then over dyeing. They state that this method makes it possible to save considerable amounts of dyestuff. See abstract.

Hixon et al. states at col 1 lines 37 et seq. that incorporating pigments into nylon at the time the filaments are produced provides solution-dyed nylon in which the coloring will not wash out or bleed during further dyeing treatments, and that said nylon may be overdyed. He states that the problem with this process is that solution dyed nylon comes in only a few solid colors, which limits the creation of designs.

It would have been obvious to the man having skill in the art at the time the invention was made to overdyed the pigmented nylon 66 produced by the process of Locke et al. and thereby produce the claimed product because both Hixon and Reinehr teach advantages of pigmenting thermoplastic fibers before spinning and then overdyed. Reinehr teaches in the abstract the first advantage in the abstract where it is stated that overdyed carbon black pigmented fibers save a considerable amount of dyestuff. The examiner notes that the trichromatic system of dyeing is a system of mixing blue, red and yellow to formulate a wide variety of neutral shades including black. Accordingly the addition of the trichromatic mixture of pigments as claimed is akin to adding a black pigment to the solution of nylon. Regarding another advantage of the process of overdyed pigmented polymers, Hixon teaches that optimum styling effects may be achieved by overdyed solution dyed nylon, and discloses the need for a larger variety of colors of solution dyed nylon, which is the problem solved by Locke et al. Regarding the claimed amount of pigment added to the polymer in claims 2 and 3, a chemical engineer in the solution dyeing art has the experience and knowledge necessary to adjust the amount of pigment to achieve his desired shading effects. Regarding claim 8, a dye chemist knows that a polymer must be dyed with a compatible

dye, for example, if the polymer is cationic dyeable nylon, a cationic dye will be used. Regarding the particular pigments claimed in claims 9-11, Locke does not disclose which pigments may be used. Accordingly, the process is deemed open to any and all pigments absent evidence to the contrary. Regarding claim 12, Locke does not name the white pigment in his example; however, titanium dioxide is the most widely used white pigment. Regarding the limitations of claims 13 and 14, Hixon et al. discloses that said solution dyed overdyed nylon is appropriate for yarns used in carpets and upholstery fabric. See col 1 line 12 and 13.

### ***Response to Arguments***

Applicant's arguments filed 2/15/06 have been fully considered but they are not persuasive. Applicant amended the claims to include the pigment loading from claim 2 into claim 1. He states that Lock teaches 0.46 weight percent pigment which is outside of the claimed limit of 10 ppm to about 1000 ppm by weight of the fiber as is currently claimed. In response to this, this office respectfully submits that applicant is looking at a working example. A reference is not limited to its preferred embodiments. The amount of pigment used is disclosed at the last paragraph of col 1 where patentee states that 0.1 weight percent (1000 ppm) to 70 weight percent is the amount of pigment in each concentrate. Since this amount is further diluted when mixed with the thermoplastic polymer, applicant's upper limitation is included in the amount used in the process of Locke. Applicant further argues that Reinehr is now excluded as a reference because applicant has deleted the optional black pigment from the claims and Reinehr only

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discloses grey pigmented yarn. In response to this argument, this office responds (1) the claim is open to the exclusion of other components because of the word "comprising" (2) the reference was used to teach the advantages of overdyeing (3) off-white is frequently grey-white and (4) "off-white" is not a claim limitation. Additionally, Applicant is directed to col 12 lines 7 et seq of Wang et al., US 5,908,663 which discloses pigmented off-white solution dyed nylon yarn, "Angelica." Using the teachings of both Hixon and Reinehr would motivate one skilled in the art to use Angelica as the base for overdyed carpet yarn. Accordingly the rejection is maintained as set forth in the previous action.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Margaret Einsmann whose telephone number is 571-272-1314. The examiner can normally be reached on 7:00 AM -4:30 PM M-W and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on 571-272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

4/25/06

  
Margaret Einsmann  
Primary Examiner  
Art Unit 1751